

PATENT COOPERATION TREATY

PCT

REC'D 12 JUN 2006


WIPO

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 4933PTWO/AG/1a		FOR FURTHER ACTION	See Form PCT/PEA/416
International application No. PCT/EP2005/051385		International filing date (day/month/year) 24.03.2005	Priority date (day/month/year) 24.03.2004
International Patent Classification (IPC) or national classification and IPC INV. B29C45/27			
Applicant S.I.P.A. SOCIETÀ INDUSTRIALIZZAZIONE			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 1 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 19.01.2006		Date of completion of this report 08.06.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized officer Zattoni, F Telephone No. +31 70 340-3202	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2005/051385

Box No. I Basis of the report

1. With regard to the **language**, this report is based on

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-7 as originally filed

Claims, Numbers

1-4 filed with telefax on 31.05.2006

Drawings, Sheets

1/3-3/3 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing *(specify)*:
- ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing *(specify)*:
- ☐ any table(s) related to sequence listing *(specify)*:

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2005/051385

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-4
	No: Claims	
Inventive step (IS)	Yes: Claims	1-4
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-4
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following document:

D1: WO-A-03086734

2. Document D1, cf. figure 5, figure 8 and page 8, lines 30-32, discloses an injection device for moulding of plastics objects, comprising: a hollow die provided with a recess and one injection hole for plastic in an area of said recess, an elongated body, positioned inside the recess, provided at one end with one heating tip, the tip being combined with at least one outflow orifice for plastic and with the respective injection hole for plastic, the elongated body forming, with an internal wall of said recess a ring shaped air space in said recess; a tube fitted around said tip near to the injection hole, said tube having an open end nearest the injection hole, whereby said open end forms together with the walls of the recess a narrow section and said tube surrounds the at least one outflow orifice at a distance such as to leave a space for outflow of the plastic, whereby the flow of plastic coming out of said outflow orifice is contained and guided towards said injection hole and said narrow section separates a first portion of said air space distal from said injection hole, from a second portion of the air space proximal to said injection hole, the area of said narrow section being substantially smaller than the respective areas of the sections of said proximal and distal areas.

Claim 1 differs therefrom in that the injection device further comprises a centering nut for forming the ring-shaped air space in said recess, and in that said tube is not in contact with said internal wall.

The subject-matter of claim 1 is therefore new and claim 1 meets the requirements of Article 33(2) PCT.

The objective problem underlying claim 1 can be regarded as in finding a good balance between nozzle centering and avoiding recirculation and contamination of moulded parts when a new production batch is started using a different material, cf. also description, page 3, lines 15-21.

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/EP2005/051385

▪ The combination of features of claim 1 is not disclosed nor suggested by the available cited documents.

- 3. Claims 2-4 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

NEW CLAIMS

1. Injection device for moulding of plastic objects, comprising

a hollow die (13) provided with a recess (16) and one or more injection holes (6) for plastic in an area of said recess,

an elongated body (2), positioned inside the recess (16), provided at one end with one or more heating tips, each heating tip being combined with at least one outflow orifice (14) for plastic and with a respective injection hole (6) for plastic, the elongated body (2) forming, with an internal wall of said recess (16) and a centering ring nut (3), a ring-shaped air space (50, 51) in said recess (16) itself,

a tube (1) fitted around said one or more tips near to the injection hole, said tube (1) having an open end (17) nearest the injection hole (6),

characterised in that said tube (1) is not contact with said internal wall and in that said open end (17) forms together with the walls (16) of the recess a narrow section (52) and in that said tube (1) surrounds the at least one outflow orifice (14) at a distance such as to leave a space for outflow of the plastic, thus whereby containing and guiding the flow of plastic coming out of said at least one outflow orifice (14) is contained and guided towards said at least one injection hole.

~~so that~~ whereby said narrow section separates a first portion (51) of said air space distal from said injection hole, from a second portion (50) of the air space proximal to said injection hole (6), the area of said narrow section (52) being substantially smaller than the respective areas of the sections of said proximal and distal areas.

2. Device according to claim 1 or 2, wherein said open end (7) of the tube (1) has one of the following shapes: substantially cylindrical, bent towards the central longitudinal axis of the at least one tip, bent towards the outside of the tip.

3. Device according to one or more claims from 1 to 3, wherein the tube (1) is adapted to heat the plastic in the distal area (51) of the air space less than in the proximal area (50) of the air space.

4. Device according to claim 4, wherein the tube has a substantially lower thermal conductivity than the elongated body (2).

AMENDED SHEET
IPE/EP